

National User Facility Organization

Annual Meeting
June 7-9, 2010 • Brookhaven National Laboratory

NUFO Agenda on Education and Outreach

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CAL POLY POMONA



NATIONAL USER FACILITY ORGANIZATION

Overview

- What do we really mean by education and outreach?
 - Information
 - Promotion
 - Recruitment
- Issues before NUFO
 - Raising our profile
 - Raising awareness
 - Raising appreciation
 - Communication (one of the seven "C"s)
- ▶ Take home messages from this meeting
 - Key points
 - Plant some seeds
 - Points to ponder
- Next steps/action items
 - Discussion





What we mean...

Develop strategies and materials to increase awareness am community of and accomplisinational user

What we don't mean...

Attract and retain a broad vithin political, pool of talented people and social

Promote scientific literacy

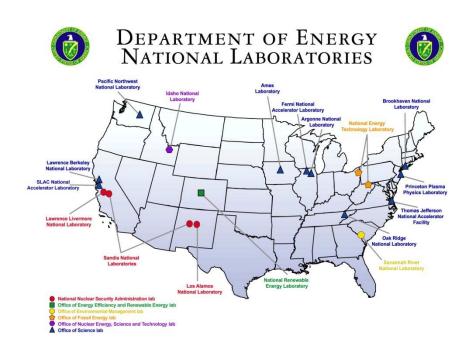
Inform and enlighten the scientific community regarding issues and solutions to accessibility

Influence public-policy and resource allocation

vithin political, and social dinstitutions to asset of interest



NUFO



Bring world class science to the classroom

Today, the classroom is ubiquitous, extending beyond traditional boundaries of bricks and mortar, thanks to cyberinfrastructure.

- Develop a professional basic energy and allied sciences workforce by mobilizing and supporting collaborative academic and industrial research, innovating educational practices, and responding to and anticipating the needs of basic energy and allied sciences research
 - The best way to engage, recruit and retain the best and brightest in basic energy and allied science careers is to provide access to and opportunities in real world basic energy and allied sciences research settings
 - Requires the integration of coursework, hands-on practice and participation in multi-disciplinary, team-based research projects



Secondary science curriculum



Synchrotron science is part of the high school science curriculum in Australia





Issues before NUFO

Raising our profile

- Develop informative educational fliers and posters for display at academic institutions, appropriate industries, professional conferences and workshops, public facilities, and other relevant locations
- What is the value added benefit of
 - Having a user organization at your facility?
 - Being a member of NUFO?
- Raising awareness and appreciation
 - Use public gatherings, special conferences, and workshops to
 - Explain the role of NUFO
 - Describe the scientific accomplishments enabled by these facilities
 - Customize the message to the audience

NATIONAL USER FACILITY ORGANIZATION

Issues before NUFO

Communication

- <u>Submit articles</u> to newsletters, such as those for governmental and civic associations, professional societies, or industries
- Initiate a new newsletter for inclusion with other mailings that focuses on activities and contributions of national user facilities
 - Weekly/biweekly inclusion "press pack"
- Include NUFO as permanent agenda item at UOEC meetings
- <u>Utilize Web 2.0/3.0</u> social media applications to reach a broad audience
 - Go beyond web pages, listservers and email
 - ▶ Facebook, Twitter, RSS feeds, streaming video
 - □ Know the audience
 - □ Identify key messages as well as communication channels to boost understanding (pedagogy!)



Facilitate Outreach

User Meetings

 2011 NUFO Meeting at SLAC National Accelerator Laboratory, Menlo Park, CA (dates TBD)

Professional Societies

- American Physical Society (APS)
- American Association for the Advancement of Science (AAAS)
- American Chemical Society (ACS)
- American Crystallographic Association (ACA)
- Materials Research Society (MRS)
- American Geophysical Union (AGU)
- Other fields? To more effectively direct resources; potential
 - Art, paleontology, pharmaceutical (AAPS)

Broader Partnerships

- USA Science and Engineering Festival, Washington, DC
- User Exhibition in Washington, DC
 - Model CUR POH "Posters on the Hill" http://www.cur.org/postersession.ht ml
- Involve students in "infrastructural" projects
 - ▶ Building robotics and automation
 - Web design and programming
- "Adopt-a-Scientist"





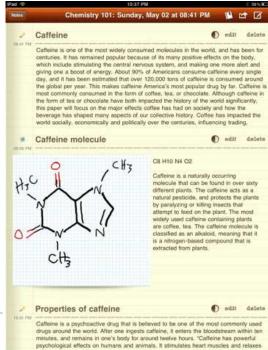
NATIONAL USER FACILITY ORGANIZATION

- Resource(s)
 - www.lightsources.org
 - "one-stop shop"
 - Capabilities
 - Events
 - Science Highlights
 - Archives of teaching resources/workshop materials
 - ► Think beyond Web 1.0
 - ▶ DOE Order 142.3*
 - ▶ Partnering with industry*





App for iPhone, iPad, Droid, Blackberry



NUFO Meeting BNL

Communication



Web 2.0/3.0









BISO



ENATIONAL



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Policy and Global Affairs

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QUICK LINKS

ACTIVITIES AND REPORTS

U.S. NATIONAL COMMITTEES

BISO MEMBERSHIP AND STAFF

DID YOU KNOW?

If you are from a developing country, you can download free PDFs of ALL Academy Reports.

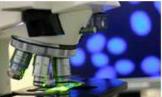
The International Visitors Office is a good resource for visa-related issues.



Contact BISO

Board on International Scientific Organizations Policy and Global Affairs The National Academies 500 Fifth Street Washington, DC 20001 USA Tel: +1 202-334-2807 Fax: +1 202-334-2231









WHO WE ARE...

The Board on International Scientific Organizations (BISO) oversees a network of more than 20 U.S. National Committees (USNCs) corresponding to the various International Council for Science (ICSU) scientific member bodies in an effort to strengthen U.S. participation in international scientific, engineering, and medical organizations. Learn more about BISO ...

WHAT'S NEW...

Bill Dorland Receives DOE's 2009 Ernest Orlando Lawrence Award

USLC/IUPAP committee member Professor Bill Dorland received the Department of Energy's Ernest Orlando Lawrence Award in the category of Nuclear Technologies for his development of computational models that have significantly advanced the predictive scientific understanding of important topics in fusion science. The E.O. Lawrence Award recognizes exceptional contributions by scientists and engineers at mid-career supporting the DoE and its mission to advance the national, economic and energy security of the United States. Each Lawrence Award consists of a

Calendar of Events

June	- 2	010

11 USLC/IUPAP, Washington, DC

14-15 IIASA Council Meeting, Vienna 17 USNC/IIASA, Washington, DC

27 USNC/TAM, Penn State

July 2010

USNC/Cr Meeting, Washington, 23

August 2010

USNC/INQUA, Laramie, WY

USNC/INQUA Teaching 10-12 Symposium, Laramie, WY

See more events...

Effective Educational Outreach





LIVE SCIENCE.

ACS

Chemistry for Life®

Web 2.0/3.0

- Streaming Video
 - Talks at this conference were streamed live and recorded
 - SciVee
 - NUFO Channel (YouTube; iTunes U)?
- Science Blogs
 - http://www.guardian.co.uk/science/blog/2010/jun/03/wanted-best-science-blogs
- RSS feeds
 - Avoid conventional methods of browsing or searching for information on websites
 - Desired/selected content is delivered directly, without cluttering your inbox with e-mail messages
 - http://www.onlinedegreeprograms.co m/blog/2010/100-best-rss-feeds-tofollow-science-news/

SCIENCE RLOG

- http://layscience.net
- http://jackofkent.blogspot.com/
- http://www.labspaces.net/
- http://www.dailygalaxy.com/
- http://www.dcscience.net/
- http://blogs.discovermagazine.com/notrocketscience
- http://www.newscientist.com/blogs/shortsharpscience/
- http://www.nhs.uk/news/Pages/NewsIndex.aspx
- http://www.sciencepunk.com
- http://scienceblogs.com/moleculeoftheday
- http://www.mindhacks.com/
- http://www.drpetra.co.uk/blog/
- http://blogs.discovermagazine.com/cosmicvariance/
- http://lifeandphysics.wordpress.com/
- http://lifeunbounded.blogspot.com/
- http://www.realclimate.org/
- http://scienceblog.cancerresearchuk.org/
- http://scienceblogs.com/pharyngula



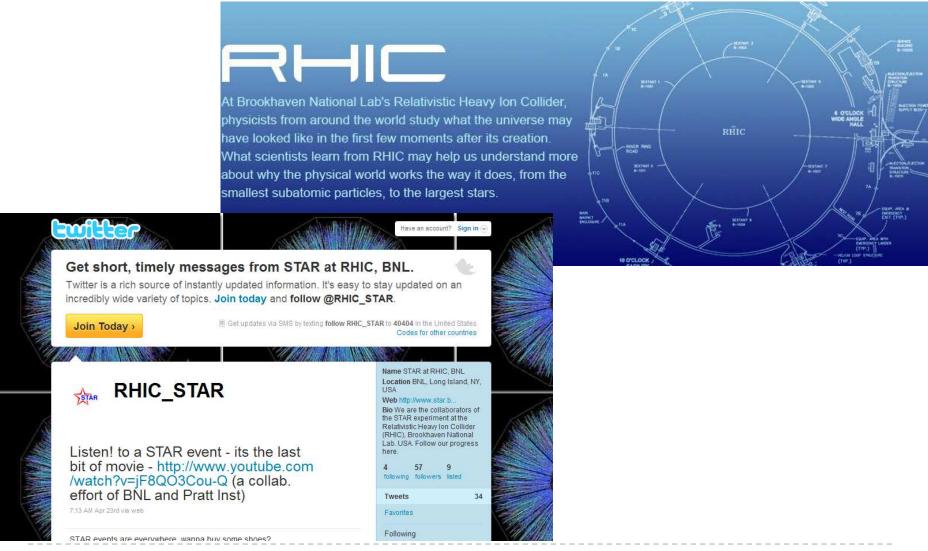
Making science visible





RHIC Web 3.0 (broader community)







ESnet Wiki (users)

Gmail Calendar Documents Web Reader more ▼

kkantardjieff@gmail.com | My Groups | Favorites | Profile | Help | My Account | Sign out





Science Federation

Search Groups

You cannot view the group's content or participate in the group because you are not currently a member. Members must be approved before joining.

Description: "Science Federation" is organizing identity federation for US DOE laboratories and related facilities. Our initial focus is Shibboleth deployment. The group will expand this description as part of its initial organizing effort.

You must be a member of this group to read its archive.

Apply for membership or contact the owner.

Home

Discussions

Pages

Files

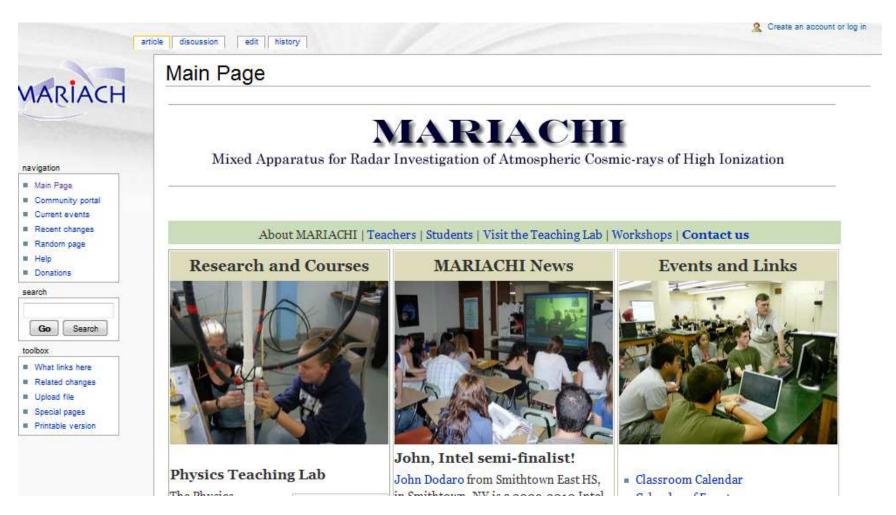
About this group

Apply for group membership

MARIACHI Wiki

(Web 2.0 collective intelligence created by a "virtual community")





Adopt-a-Physicist (informal learning by 'students')



Adopt-a-Physicist



Home - Login - Student Login - About the Program

The Spring 2010 Adopt-a-Physicist Session is ending.

Thank you to all of our Spring 2010 participants!

The forums are now closed to new student posts, but physicists may answer any last-minute questions through April 16, 2010.

Spring 2010 Student Login





Spring 2010 class logins will remain available until the next session for students wishing to access their physicists' forums.

Physicist and Teacher Login

Physicists and teachers may login here to access the Adopt-a-Physicist Spring 2010 forums.

If you have any questions, please contact us.

The Adopt-a-Physicist program is led by Sigma Pi Sigma, the physics honor society, with aid from the American Physical Society and the American Association of Physics Teachers. Technical support is provided by the ComPADRE Digital Library.



NUFO UEC Chairs (Google Group)



Gmail Calendar Documents Web Reader more ▼ kkantardjieff@gmail.com | My Groups | Favorites | Profile | Help | My Account | Sign out Google groups 🙀 NUFO UEC Chairs Search this group Search Groups New since last time: 20 messages Home Home Discussions Discussions 10 of 55 messages view all » Members + new post **Pages** FW: Please Sign the Support America COMPETES Petition to Congress ASAPI **Files** By Rene Bellwied - Jun 3 - 1 author - 0 replies NUFO: Reminder to Register for Annual Meeting By susan white-dep...@nufo.org - May 27 - 1 author - 0 replies About this group Please attend the annual NUFO meeting Edit my membership By Rene Bellwied - May 21 - 1 author - 2 replies NUFO: Register for Annual Meeting Group info By susan white-dep... @nufo.org - May 13 - 1 author - 0 replies Members: 45 NUFO: New Steering Committee Members Language: English By susan white-dep. . @nufo.org - May 13 - 1 author - 0 replies NUFO: Voting Closes on Wednesday, Vote NOW for Steering Committee Members Group categories: Not By susan white-dep...@nufo.org - May 10 - 1 author - 0 replies categorized NUFO: Cast Your Vote NOW for Steering Committee Members More group info » By susan white-dep...@nufo.org - May 6 - 1 author - 0 replies Voting Begins Today for NUFO Steering Committee Members By Susan Strasser - Apr 30 - 1 author - 0 replies NUFO: Register for Annual Meeting By susan white-dep...@nufo.org - Apr 30 - 1 author - 0 replies Reminder: 2011 Funding for DOE Office of Science Funding By Rene Bellwied - Apr 27 - 1 author - 0 replies Members 45 members view all »

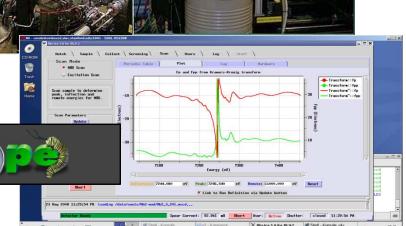
Remote Users

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STARBURSTT-CDC









"Naïve" Users

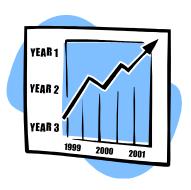
- Increasingly large numbers of "naïve" users, who require more assistance than the experienced user, work in academia and industry
 - Cassman, M. (1999). Synchrotron Radiation for Macromolecular Crystallography Report: Report of the Office of Science and Technology Policy Working Group on Structural Biology at Synchrotron Radiation Facilities, Washington D.C.
- Staff researchers could be incentivized and rewarded for assisting non-expert users from industry α



Metrics – How are we doing?

- Integrate data from user surveys
 - Share best practices
 - ▶ Facilitate short and long range facility/user program planning
 - Know the stakeholders and their needs
 - "Broader Impacts"
- How often should we collect data?
- What data should be collected?
- ▶ How should we collect it?







"The future is already here, it's just unevenly distributed."

William Gibson, American science fiction writer, author of "Neuromancer", NPR 1999



Acknowledgements

- NUFO Steering Committee Members
- Presenters
- SSRL UOEC
- CSUPERB
 - California State University Program for Education and Research in Biotechnology
- National Science Foundation
- The Boeing Company
- W.M. Keck Foundation
- USNC/Cr
 - US National Committee for Crystallography
- ► IUCr
 - International Union of Crystallography

Shark video

http://www.screencast.com/t/NGU 5ZDkyNz

kantardjieff@csupomona.edu

FB, Twitter, LinkedIn, Skype, Google, Windows Live





Discussion and Questions



Seven "C"s

- ▶ Communicate
- Cooperate
- Comment
- Correct
- Criticize
- Congratulate
- Collaborate